## REMARKS

Applicants appreciate the detailed examination evidenced by the final Office Action dated January 22, 2003 (hereinafter "the final Office Action"), and the indication of patentable subject matter in Claims 16, 18, 27-29, 41, 47-50 and 61. Applicants have amended Claims 16, 18, 27, 41, 47 and 61 to independent form incorporating the recitations of base and intervening claims, and have amended Claim 50 to depend from Claim 47. Applicants respectfully request that these amendments be entered, as they introduce no new matter and place Claims 16, 18, 27-29, 41, 47-50 and 61 in condition for allowance. Applicants also respectfully request reconsideration and withdrawal of the rejections of independent Claims 1, 12, 21, 31, 37, 45, 51, 55, 63 and 64 for at least the reasons discussed in detail below.

**The § 112 rejection**

The final Office Action appears to repeat the § 112 rejection of Claim 64 from the Office Action of September 26, 2002. However, Applicants' Amendment of December 20, 2002 amended Claim 64 to more clearly indicate that "an extent to which a previously received signal was decoded" is a part of the "at least one of" list. Accordingly, Applicants request withdrawal of this rejection.

**Independent Claims 1, 21, 31, 37, 45, 51 and 63 are patentable over Burshtein**

The final Office Action concedes that Burshtein does not teach "wherein the selection of the code from the set of codes is biased based on a prior communication between the first station and a second station that transmitted the signal that occurred prior to reception of the signal at the first station" (final Office Action, pp. 4 and 5) as recited in Claim 1. However, the final Office Action asserts that "[i]t would have been obvious to one having ordinary skill in the art . . . to reverse to the second station from transmitting the signal that occurred prior to reception of the signal at the first station, since it has been held that rearranging parts of an invention involves only routine skill in the art" (Office Action, p. 5).

Respectfully, this stated basis appears to be irrelevant to the subject recitations of Claim 1. In particular, there appears to be no logical connection between the claim

recitations "wherein the selection of the code from the set of codes is biased based on a prior communication between the first station and a second station that transmitted the signal that occurred prior to reception of the signal at the first station" and the alleged prior art suggestion "to reverse to the second station from transmitting the signal that occurred prior to reception of the signal at the first station." More particularly, there appears to be no logical connection between the ***biasing based on a prior communication*** recited in Claim 1 and the alleged prior art suggestion. Accordingly, Applicants submit that the § 103 rejection of Claim 1 is improper and should be withdrawn.

Regarding the rejections of Claims 21, 31, 45 and 51, the final Office Action states that Applicants' arguments from the Amendment of December 20, 2002 "are moot in view of the new grounds of rejection" (final Office Action, p. 2). However, the final Office Action merely states that "Claims 21-26 and 31-36 are discussed in regards to other claims in this and prior action" and that "Claims 44-46 and 51-54 are discussed in regards to other claims in this and prior action" (final Office Action, p. 9), which affords no indication to Applicants as to the specific nature of the "new grounds of rejection" referred to on page 2 of the final Office Action. Therefore, Applicants respectfully submit that the rejections of Claims 21, 31, 45 and 51 are improper for at least this reason. Moreover, even if the Examiner intended to raise grounds for rejecting Claims 21, 31, 45 and 51 similar to the grounds presented in rejecting Claim 1, Applicants submit that Claims 21, 31, 45 and 51 are patentable over Burshtein for at least the reasons discussed above with reference to Claim 1.

The final Office Action assigns no patentable weight to recitations in the preambles of independent Claims 37 and 55 that provide antecedent basis for recitations following the preambles, citing *In re Hirao* for the rule that "[a] preamble is ***generally*** not accorded any patentable weight where it merely recites the purpose of a process or an intended use, and ***where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone***" (final Office Action, p. 2, emphasis added). However, the conclusions about Claims 37 and 55 drawn in the final Office Action are in direct contradiction to the stated rule of *In re Hirao*, because Claims 37 and 55 represent the

very exceptions implied in this statement of the rule of *In re Hirao*. In particular, the bodies of Claims 37 and 55 ***do*** depend on the preambles for completeness and do not stand alone without their respective preambles; as noted above, the preambles define terms that are used in the bodies of claims. Accordingly, Applicants submit that the preambles of Claims 37 and 55 should be afforded patentable weight and that Claims 37 and 55 are patentable over Burshtein for at least the reasons discussed in Applicants' Amendment of December 20, 2002.

The final Office Action maintains the same rejection of Claim 12 asserted in the Office Action of September 26, 2002, i.e., that Burshtein anticipates Claim 12. Applicants pointed out in the Amendment of December 20, 2002 that Burshtein does not disclose or suggest, among other things, "***identifying the code applied to the first field based on a selected one of the generated estimate of the second field or a combination of the generated estimate of the second field and respective likelihood metrics associated with decoding the received signal according to respective codes of the set of codes, wherein selection is based on a confidence in the generated estimate of the second field***," as the passages from Burshtein cited as teaching such recitations (column 6, lines 36-38 and 47-60; see Office Action of September 26, 2002, p. 8) include no description of "a signal representing a first field and a second field, wherein the first field is coded according to a code selected from a set of codes and the second field indicates the code applied to the first field" and, therefore, cannot disclose or suggest the claim recitations relating to identification of a code applied to a field. The final Office Action asserts, however, that "a signal which includes CRC data will contain a first field which does not have CRC data and a second field which does contain CRC data," and that "[t]he CRC data will be developed based on the code in the non-CRC portion" (final Office Action, p. 2)

Respectfully, this is a misunderstanding of the function of the CRC (cyclic redundancy code) field described in Burshtein. This CRC field is generated by applying a known code to data in a data field to generate a redundant form of the data that can be used to check if the data is correctly received. As is well known in the art, error detection using a CRC is performed by applying the same CRC code used to generate the CRC field at the transmitting end to data received at the receiving end.

The CRC generated at the receiving end is compared with the transmitted CRC field to determine if a transmission error has occurred. The code applied in generating a CRC field is already known at both the transmitting and receiving ends, as this is a basic premise of error detection using CRCs -- applying a known code to data at both ends to see if data at the receiving end produces the same result as data at the transmitting end. Accordingly, Burshtein does not disclose or suggest "identification" the ***CRC code*** (i.e., the code used to generate the CRC field) from the received ***CRC field*** at the receiving end. For at least these reasons, Applicants submit that Burshtein does not anticipate Claim 12, and that the rejection of Claim 12 is improper and should be withdrawn.

**The dependent claims are patentable**

Applicants submit that the dependent claims are patentable at least by virtue of depending from various ones of patentable independent Claims 1, 12, 21, 31, 37, 45, 55 and 63. Applicants further submit that many of the dependent claims are separately patentable.

For example, Claim 2, which depends from Claim 1 and stands rejected as obvious over Burshtein, recites:

> . . . wherein said step of selecting a code from the set of codes is preceded by the step of generating a measure of quality for a channel over which the signal is communicated based on a communication between the first and second stations; and
>
> wherein said step of selecting a code from the set of codes comprises the step of biasing the selection of a code from the set of codes based on the generated measure of channel quality.

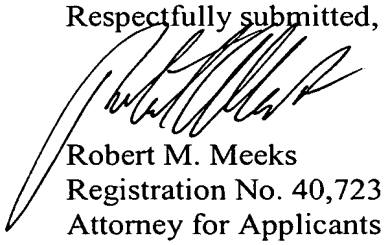
As discussed above and in Applicants' Amendment of December 20, 2002, Burshtein does not disclose or suggest biasing a code selection based on a prior communication, much less the specific techniques for biasing recited in Claim 2. For at least these reasons, Applicants submit that Claim 2 and the apparatus analogs thereof are separately patentable over Burshtein. Similar arguments for separate patentability apply to the specific techniques recited in Claims 3-9 and the apparatus analogs thereof.

As another example, Claim 15, which depends from Claim 12 and stands rejected as anticipated by Burshtein, recites "wherein said step of decoding the received signal according to respective codes of the set of codes comprises the step of decoding the received signal according to respective codes of the set of codes to an extent that is determined based on prior communication between the first station and a second station that transmitted the signal." Burshtein simply does not disclose or suggest basing decoding extent on a prior communication. For at least these reasons, Applicants submit that Claim 15 and the apparatus analogs thereof are separately patentable over Burshtein.

**Conclusion**

Applicants have amended Claims 16, 18, 27, 41, 47 and 61 to independent form incorporating the recitations of base and intervening claims, and have amended Claim 50 to depend from Claim 47, thus placing Claims 16, 18, 27-29, 41, 47-50, and 61 in condition for allowance. In addition, Applicants respectfully request reconsideration and withdrawal of the rejections of independent Claims 1, 12, 21, 31, 37, 45, 51, 55 and 63, as the cited Burshtein reference does not provide the teachings alleged in the final Office Action. Applicants submit that the claims are now in condition for allowance, and respectfully request allowance of all claims in due course. If any informal matters arise the Examiner is encouraged to contact the undersigned by telephone at (919) 854-1400.

Respectfully submitted,



Robert M. Meeks
Registration No. 40,723
Attorney for Applicants

Correspondence Address:

20792
PATENT TRADEMARK OFFICE

**CERTIFICATE OF MAILING**

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: BOX AF, Commissioner for Patents, Washington, DC 20231, on March 20, 2003.

Candi L. Riggs

Candi L. Riggs; Date of Signature: March 20, 2003

## VERSION WITH MARKINGS TO SHOW CHANGES MADE

**In the Claims:**

Claims 16, 18, 27, 41, 44, 47, 50 and 61 have been amended as follows:

16. (Amended) [A method according to Claim 15,] A method of processing a signal representing a first field and a second field, wherein the first field is coded according to a code selected from a set of codes and the second field indicates the code applied to the first field, the method comprising the steps of:

receiving the signal at a first station;

processing the received signal to generate an estimate of the second field;

identifying the code applied to the first field based on a selected one of the generated estimate of the second field or a combination of the generated estimate of the second field and respective likelihood metrics associated with decoding the received signal according to respective codes of the set of codes, wherein selection is based on a confidence in the generated estimate of the second field, and wherein said step of identifying the code applied to the first field comprises the steps of:

decoding the received signal according to respective codes of the set of codes, wherein said step of decoding the received signal according to respective codes of the set of codes to an extent that is determined based on prior communication comprises the step of decoding the received signal according to respective codes of the set of codes to an extent that is determined based on at least one of a measure of channel quality, a communications status report transmitted between the first station and a second station that transmitted the signal, an error indication, an error rate estimate, a state of a communications transaction between the first station and the second station, and an extent to which a previously received signal was decoded; and

generating respective likelihood metrics for the respective decodings of the received signal according to the respective codes of the set of codes; and

decoding the received signal according to the identified code to produce an estimate of the first field.

18. (Amended) [A method according to Claim 17,] A method of processing a signal representing a first field and a second field, wherein the first field is coded according to a code selected from a set of codes and the second field indicates the code applied to the first field, the method comprising the steps of:

receiving the signal at a first station;

processing the received signal to generate an estimate of the second field;

identifying the code applied to the first field based on a selected one of the generated estimate of the second field or a combination of the generated estimate of the second field and respective likelihood metrics associated with decoding the received signal according to respective codes of the set of codes, wherein selection is based on a confidence in the generated estimate of the second field, wherein said step of identifying the code applied to the first field comprises the step of biasing a selection of a code from the set of codes based on prior communication between the first station and a second station that transmitted the signal that occurred prior to reception of the signal at the first station, and wherein said step of biasing a selection of a code from the set of codes comprises the step of biasing the selection of a code from the set of codes based on at least one of a measure of channel quality, a communications status report transmitted between the first station and a second station that transmitted the signal, an error indication, an error rate estimate, a state of a communications transaction between the first station and the second station, and an extent to which a previously received signal was decoded; and

decoding the received signal according to the identified code to produce an estimate of the first field.

27. [A method according to Claim 21:] A method of processing a signal representing information coded according to a code selected from a set of codes, the method comprising the steps of:

receiving the signal at a first station;

determining an extent to which to decode the received signal based on a communication between the first station and a second station that transmitted the signal that occurred prior to reception of the signal at the first station;

decoding the received signal according to respective codes of the set of codes to the determined extent to generate respective likelihood metrics associated with respective codes of the set of codes;

selecting a code from the set of codes based on the respective likelihood metrics; and

decoding the received signal according to the selected code to generate an estimate of the information,

wherein said step of determining an extent to which to decode the received signal is preceded by the steps of:

receiving a first signal; and

decoding the received first signal according to respective codes of the set of codes to a first extent to generate respective first likelihood metrics associated with respective codes of the set of codes;

wherein said step of receiving a signal comprises the step of receiving a second signal; and

wherein said step of determining an extent to which to decode the received signal comprises the step of determining an second extent to which to decode the received second signal based on the first extent to which the received first signal was decoded.

41. (Amended) [A wireless station according to Claim 40,] A wireless station for processing a signal representing a first field and a second field, the first field coded according to a code selected from a set of codes and the second field indicating the code applied to the first field, the wireless station comprising:

a code selector circuit that processes the signal to generate an estimate of the second field, and that is operative, responsive to a confidence in the generated estimate of the second field, to select the code applied to the first field based solely on the generated estimate of the second field or to select the code applied to the first field based on the generated estimate of the second field and respective likelihood metrics associated with decoding the received signal according to respective codes of the set of codes, wherein said code selector circuit is operative to decode the received signal according to respective codes of the set of codes and to generate respective likelihood metrics for the respective decodings of the received signal according to the respective codes of the set of codes, wherein said code selector circuit is operative to decode the signal according to respective codes of the set of codes to an extent that is determined based on a confidence in the generated estimate of the second field, wherein said code selector circuit is operative to decode the signal according to respective codes of the set of codes to an extent that is determined based on prior communication between the wireless station and a station that transmitted the signal, and wherein said code selector circuit is operative to decode the signal according to respective codes of the set of codes to an extent that is determined based on at least one of a measure of channel quality, a communications status report transmitted between the wireless station and the station that transmitted the signal, an error indication, an error rate estimate, a state of a communications transaction between the wireless station and the station that transmitted the signal, and an extent to which a previously received signal was decoded; and

a variable decoder, responsive to said code selector circuit, that decodes the signal according to the selected code to produce an estimate of the first field.

44. (Amended) A wireless station according to Claim 47, wherein a respective code of the set of codes comprises a respective combination of a modulation code and a channel code.[.]

47. (Amended) [A wireless station according to Claim 46,] A wireless station for processing a signal representing information coded according to a code selected from a set of codes, the wireless station comprising:

a receiver that receives the signal, that determines an extent to which to decode the received signal based on a communication between the wireless station and a station that transmitted the signal that occurred prior to reception of the signal, that decodes the received signal according to respective codes of the set of codes to the determined extent to generate respective likelihood metrics associated with respective codes of the set of codes, that selects a code from the set of codes based on the respective likelihood metrics, and that decodes the received signal according to the selected code to generate an estimate of the information, wherein said receiver comprises:

a code selector circuit that determines an extent to which to decode the received signal based on a prior communication between the wireless station and the station that transmitted the signal, that decodes the received signal according to respective codes of the set of codes to the determined extent to generate respective likelihood metrics associated with respective codes of the set of codes, and that selects a code from the set of codes based on the respective likelihood metrics, wherein said code selector circuit is operative to determine the extent to which to decode the received signal based on at least one of a measure of channel quality, a communications status report transmitted between the wireless station and the station that transmitted the signal, an error indication, an error rate estimate, a state of a communications transaction between the wireless station and the station that transmitted the signal, and an extent to which a previously received signal was decoded; and

a variable decoder, responsive to said code selector circuit, that decodes the received signal according to the selected code to generate an estimate of the information.

50. (Amended) A wireless station according to Claim [42] 47, wherein the signal represents a first field and a second field, wherein the first field is coded according to a code selected from a set of codes and the second field indicates the code applied to the first field, and wherein said code selector circuit is operative to process the received signal to generate an estimate of the second field and to determining the extent to which to decode the received signal based on a confidence in the generated estimate of the second field.

61. (Amended) [A wireless station according to Claim 60,] A wireless station for processing a signal representing a first field and a second field, wherein the first field is coded according to a code selected from a set of codes and the second field indicates the code applied to the first field, the wireless station comprising:

means for receiving the signal;

means for processing the received signal to generate an estimate of the second field;

means, responsive to a confidence in the generated estimate of the second field, for identifying the code applied to the first field based solely on the generated estimate of the second field or for identifying the code applied to the first field based on the generated estimate of the second field and respective likelihood metrics associated with decoding the received signal according to respective codes of the set of codes, wherein said means for identifying the code applied to the first field based solely on the generated estimate of the second field or for identifying the code applied to the first field based on the generated estimate of the second field and respective likelihood metrics associated with decoding the received signal according to respective codes of the set of codes comprises means for biasing a selection of a code from the set of codes based on prior communication between the wireless station and the station that transmitted the signal, and wherein said means for biasing a selection of a code from the set of codes comprises means for biasing the selection of a code from the set of codes based on at least one of a measure of channel quality, a communications status report transmitted between the wireless station and the station that transmitted the signal, an error indication, an error rate estimate, a state of a

communications transaction between the wireless station and the station that transmitted the signal, and an extent to which a previously received signal was decoded; and

means for decoding the received signal according to the identified code to produce an estimate of the first field.

****END****